Criterion B: Design

This program was designed with the GUI being developed first before logic was implemented.

Logic:

The program consists of having the state of the input object read. With that data we then use a method to cross the two different genes to calculate for the different ratios of offspring with certain traits. This is then displayed in the ratios section and the grid section

User Input:

The user input for this program is simple as the user only needs to choose the amount of traits being bred, the letter used to identify that trait, and toggling a switch of the capitalization of the letter representing dominance. These are able to be read through the action listener.

Generate Solutions:

The algorithm for this program is to split the string outputted by the genes into sections by trait number and parent. It is then crossed with the other parent with corresponding genes. This is when it adds each character to a string in the order showing the dominant and recessive genes for that offspring. These are then organized into ratios with the recording of the prevalence of one pattern of genes.